Before the
Federal Communications Commission
Washington, DC 20554

In The Matter of	)	
	)	
Amendment of Section 73.99	)	
of the Rules and Regulations	)	April 2,2007
Concerning Pre-Sunrise Service	)	
Authorizations and Post Sunset	)	
Service Authorizations for the	)	
AM Broadcast Service	)	

Petition for Rulemaking

Background

1. The Federal Communications commission has provided for operation of Class D and Class B AM stations to p v i d e *service* to theii communities during the period of 6 AM to local sunrise and for Class D stations to p v i d e *service* from local *sunset* for a period of up to two hours after sunset. This additional operation provides the ability for many stations to provide service during the critical period when people need information on travel to *start* their workdays, and in the northern areas *during* critical after work travel periods. Additionally, this *service* during expanded hours helps daytime and class B AM stations with low night power to be financially viable, as the morning and *evening* drive time is the most economically valuable *service* a station can provide.

2. *Since* the inception of the Pre Sun Rise Authorization (PSRA) and Post Sun *Set* Authorization (PSSA) authorizations many changes have occurred in the authorization and operation of daytime (class D) *AM* stations. A most significant development is the authorization of night secondary operation of AM stations.

3. In 1992, *AM* stations were authorized secondary nighttime authorization with their daytime or critical hours antenna at reduced power. Subsequently, some AM *stations* have been authorized secondary night operation with separate antenna systems. These separate night antennas are designed to reach the desired service area better with low power, and/or operate with higher power while still fully protecting the primary stations on the channel. The PSRA and PSSA extended hours rules have not been revised since 1992.

4. A second change is that computer analysis of night allocations is much more available, with studies from Dataworld, Radiosoft and others allowing night protection analysis *at* low *cost.*

5. A third change is that international agreements have been amended to recognize and regulate expanded hours operation when it effects stations not within the United States.

6. A fourth change is that virtually all transmitters now manufactured, and most in service, have the ability to be set to many different power levels to support extended hours of operation.

MB 07-22

7. A fifth change is that the Congress has extended daylight savings time twice, for a cumulative period of more than a month and a half, which makes Pre Sunrise Service Authorizations critical to the viability of many more stations.

The Petitioner

7. Edward A. Schober, is a licensed professional engineer employed by Radiotechniques Engineering LLC, a New Jersey limited iiability company that provides engineering *services* to broadcasting stations. Mr. Schober has over twenty-five years experience in advising broadcast radio station clients in areas of RF engineering, station design, FCC technical representation and propagation studies. Many of these. stations are AM facilities. Mr Schober is a member of the AFCCE, and a senior member of the IEEE and SBE. Mr Schober's contact information is:

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The Proposals

8. The proposals herein *may* be *taken* individually for consideration, as each proposal is not *dependent* upon the *others* to provide relief for daytime and fulltime AM *stations* with low night power. They are as follows:

- Amend Section 73.99 to amend the 500 watt maximum power limitation for extended hours operation.
- Make all class B and class D stations eligible for *extended* hours operation provided that they cause no interference.
- Establish the Intermittent Service of Class A stations as ending at sunrise or 7 AM local time *at* the site of the class A station, whichever is earlier, and the *extent* of the Intermittent Service Area as bounded by the location of 0.5 mV/m 50% skywave contour, as modified by dinural curves.
- Permit extended hours operation *using* the Day, Critical Hours, Night, Auxiliary or a single element of any licensed directional antenna
- Calculate new extended hours operation power using Section 73.182 and the dinural curves to protect domestic adjacent channel stations
- Procedurally establish extended hours applications as minor change applieations to cover *costs* of administrati' only by the FCC.

9. The first proposal is to modify Section 73.99(a) to amend the 500 Watt power limitation for extended hours operation. The 500 Watt limitation was established originally as an upper bound in

the original Pre-Sunrise Authorizations (PSA).

The concept, I believe, was that this power level would only inflict minimal interference on domestic stations. Regional channel daytime and fulltime stations were authorized PSA service without regard to the specific interference that might be *caused* to other domestic stations. The morning service was deemed too valuable for the daytime stations, and computer analysis was unavailable to conduct night studies at that time.

A) I propose that this section be amended to delete the *500* Watt power level cap for extended hours operation, provided full protection to other stations' night operation is afforded.

   a. All applications for PSRA and PSSA *operation* before 6 pm should show that the interfering signal *toward* each domestic Class B *station* is not greater than that produced by the applicant station's daytime or critical hours (if applicable) antenna operating at 500 watts, or that each class B station is fully protected to the 50% RSS exclusion contour *using* the methods of Section 73.182 adjusted for the dinural curves, and each class A station is fully protected to the 0.5 mV/m Groundwave contour and to the boundaries of the intermittent service area as adjusted by the dinural curves.

   b. All PSSA operations *after 6* PM shall fully protect all class B stations to the 50% RSS exclusion contour using the methods of Section 73.182 and the dinural *curves.*

   c. PSRA authorizations limited by Class A or foreign *station* protection, or proposing power over 500 watts should specify power level in 15 minute increments, similar to PSSA authorizations.

B) Many class B and *class* D stations have high daytime p o w and large *service* areas, but small or no night service areas. Extending the effective service area of these. station by authorizing greater power levels that will provide substantial coverage areas into the very valuable "drive time" hours would be very beneficial, provided they fully protect *other* stations.

D) An individual station's extended hours operation should be limited to not exceed the day, critical hours or night power, whichever is greater.

C) The US-Canadian, US-Mexican and Region II Rio agreements have no specific power limits for extended hours operation, so there is no international impediment to this change.

10. The second proposal is to extend the applicability of all extended hours operation to both class B and D stations. Many class B stations operate with low power at night, reduced from the daytime power. Further, the night service area of class B *stations* is limited by interference from other stations that do not cause interference in the daytime. Except for the fact that the night service area is protected from interference, the difference in the night facility between a class B station operating at 250 Watts and a class D station *operating* at 230 Watts is negligible. Permitting these class B *stations* to operate *during extended* hours at the highest practicable power that causes no interference is in the public interest.

11. The third proposal is to more accurately establish the location of the 0.5 mV/m 50%

intermittent *service* area (for PSRA and PSSA purposes) of domestic class A stations using the dinural curves. The secondary *service* area of Class A *stations* vary with the dinural variations of the ionisphere. It makes sense to protect a service area only when it actually *exists*.

Presently, the *size* and shape of the *secondary service* area is assumed to be uniform, while experience shows that at sunset, the *secondary service* area to the east of a class A station *exists* long before the skywave signal *can* even be heard on the western side of the station, and conversely in the morning the secondary *service* area collapses to the east long before it does to the west. The calculations to perform this analysis were nearly impossible to accomplish before the use of powerful computers, but it is easily within the capabilities of present desktop computers.

A) The benefit of this proposal is that class A *stations* remain fully protected within their actual service area, but many class D stations within the presently defined secondary service areas of these stations would be able to benefit from some extended hours of operation, and those class D and class B stations further away will benefit from increased power for a portion of the extended hours of operation.

B) The 0.5 mV/m night groundwave contour of the Class A station would in all *cases* be fully protected by the station using expanded hours of operation.

12. The fourth proposed change would be to permit expanded hours operation *using:* a) the authorized day antenna, b) the authorized critical hours antenna, c) the authorized night antenna, d) the authorized auxiliary antenna or e) a single element of any of the above antennas. The FCC staff has already recognized this need, in that the initial instructions for the *emergency* PSSA PSRA adjustments for the Congressionally mandated Daylight Savings Time changes were intended to permit use of Class D night antennas.

Some applicants *may* wish to operate using one antenna for part of the *extended* period, and another f a another part. Ex. Use the *day* antenna for the first PSSA period or two, and using the night antenna thereafter.

Present rules maintain a directional antenna ""Q" value at 10 for power less than 1 kW, essentially "filling in" the directional nulls. For domestic analysis of extended hours operation, directional antennas used *at* less than 1 kW should be analyzed for extended hours of operation by scaling from the full power pattern, *even* though it would result in a "Q" value less than 10 mV/m @ 1 km. For international purposes, the pattern should be in accordance with the appropriate international agreement.

13. The fifth proposed change is to calculate interference to domestic stations in accordance with the methods of FCC Rules 73.182, as it is important to provide consistent service areas of all *stations*. For practical purposes, low power PSRA and PSSA operations will not interfere with first adjacent channel *stations* except in those few cases where the authorized power would be high, or the interference limit of *the* other *station* is particularly low. *As* an example, a *500* watt omnidirectional operation with a quarter wave antenna will produce a maximum night limit of less than 0.2 mV/m at *any* location without adjustment for dinural factors. Class B stations are protected to the 2.0 mV/m limit, so the example operation cannot raise the 50% night limit of any first adjacent

channel Class B station. It takes substantially higher power and/or a directional antenna that enhances radiation in the direction of an adjacent channel station to cause interference. First adjacent channel protection is important in the context of the higher power proposed herein, and to protect digital transmissions.

14. Procedurally, applications for PSRA and PSSA operation could be the subject of minor change application. The licensee would present a series of allocation studies for each time period to support the facility proposed. By making the application for changes subject to a fee, these changes will not pose a budgetary burden on the FCC that is not supported by fee revenue. The FCC could continue to process requests that comply with present rules if desired.

15. The present analysis to protect foreign class A stations does not properly calculate protection requirements and service areas where the service area is terminated at an international boundary or ocean. Although this probably effects a minority of stations, PSSA and PSRA authorizations should correctly determine protection requirements of foreign stations, and not default to overprotect these stations.

16. Many Canadian AM stations are now silent, with the programming transferred to the FM band. The Canadian Government has notified the FCC of the silent status of these Stations. Since expanded hours operations are secondary authorizations subject to modification or deletion at any time, the FCC should issue PSSA and PSRA authorizations without regard to these silent facilities, subject to modification m the unlikely circumstance that Canada resumes operation of the silent allocation. Additionally, Mexico has notified the United States of many non-compatible and unbuilt proposals. These incompatible and silent proposals should not be considered for protection by secondary PSSA and PSRA operation, subject to revision in the case that the Mexican proposal is subsequently put into operation. Similarly, several Mexican class A stations have operated for decades with at much less than their authorized power. These stations should be protected to their actual operation, once again subject to revision in the unlikely case that the Class A station should revert to its full power operation

17. These proposed rule changes can be expected to provide the following benefits to AM radio broadcasters:

a) Some Class D stations on US Clear channels will be permitted low power expanded hours operations beyond a few minutes for the first time.

b) Many class B stations that are authorized greater power daytime than nighttime will be permitted to operate their night antenna systems with increased power during expanded hours.

c) Many Class D Stations With separate night antennas (DA-2, DA-N) will be permitted to operate their night antenna systems with increased power during expanded hours.

d) Licensees of Class D stations will be more likely to consider applying for separate night antennas to take advantage of the potential for increased power during

expanded hours.

e) Some Class B stations will utilize their "in town" daytime or auxiliary antennas during expanded hours to pmvide better service than their "out of town" weak night signals.

f) All stations effected by the proposed changes will benefit from a more uniform coverage area during the critical morning and evening "drive time".

g) Stations will be properly protected on first adjacent channels during expanded hours which will facilitate implementation of IBOC digital service. No stations will receive more interference than permitted under current rules.

18. Implementation of these proposals will provide for a more robust AM broadcast service. Stations, particularly in northern areas, will have a more uniform year round service area and period of operation.

19. Although these proposals will permit expanded operation of AM stations, and greatly increase the number of stations eligible for expanded hours option, no additional interference will result, since all proposed increases in expanded hours operations will fully protect other stations. This proposal will serve to improve the AM broadcast service while providing no new interference using established allocations procedures.

20. Recognizing that some of these proposals may be more difficult toimplement administratively, I request that each of these proposals, and the counter proposals likely to be generated in response to this petition be considered separately.

21. Therefore, I respectfully petition the Federal Communications Commission to institute a rulemaking proceeding to revise the PSSA and PSRA rules in accordance with these proposals.

Respectfully submitted

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